FIG. 1

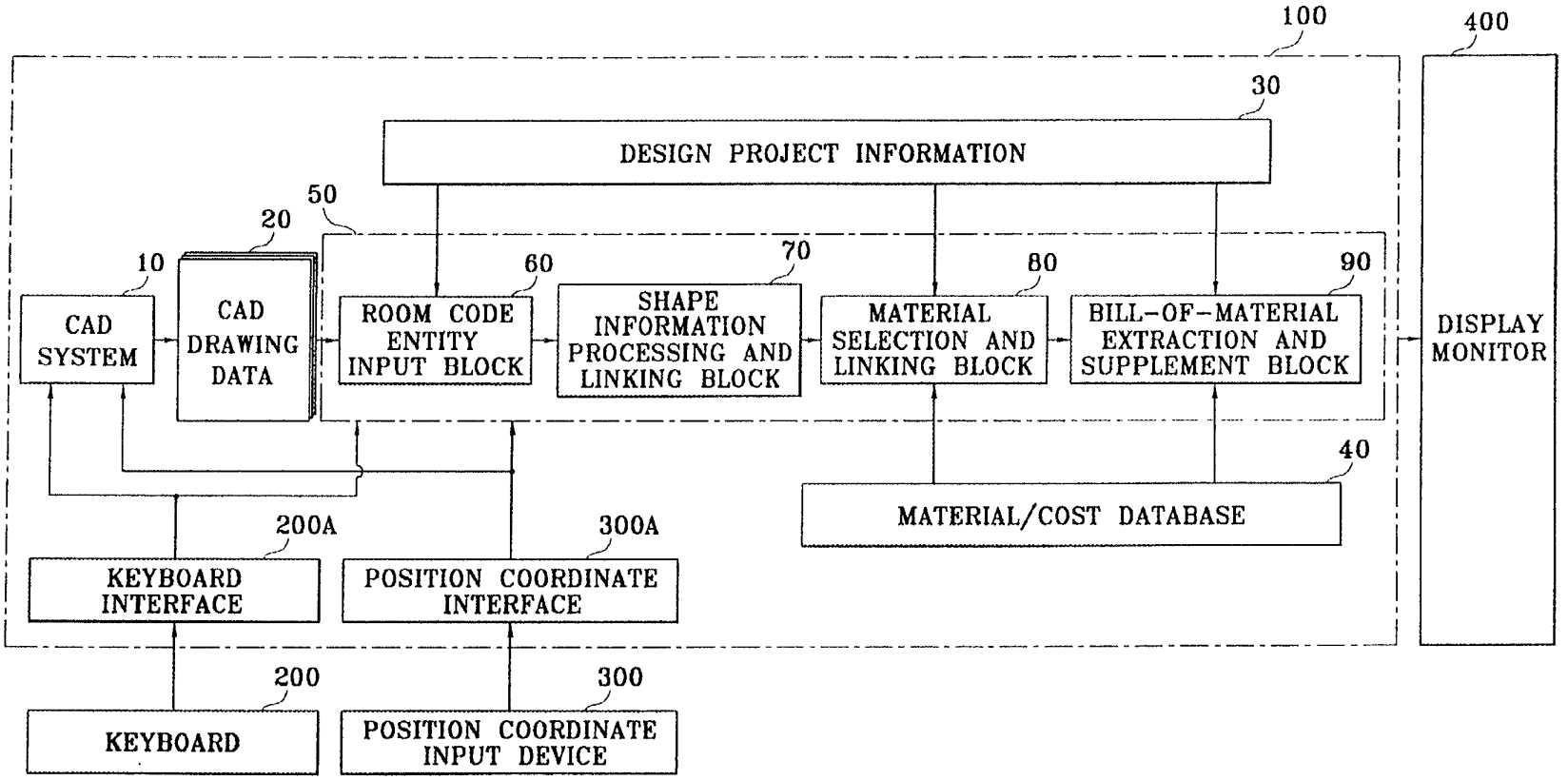
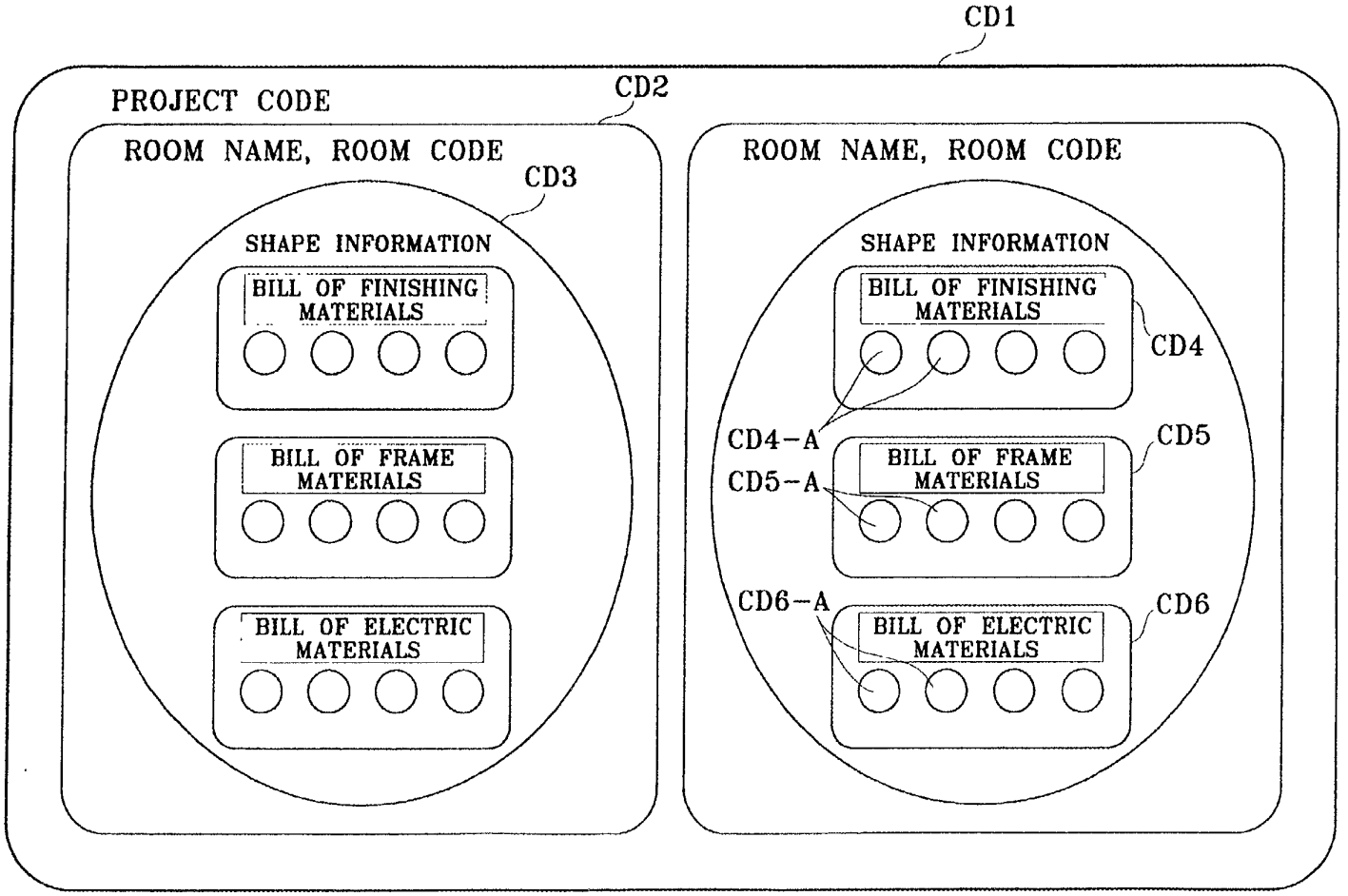


FIG.2



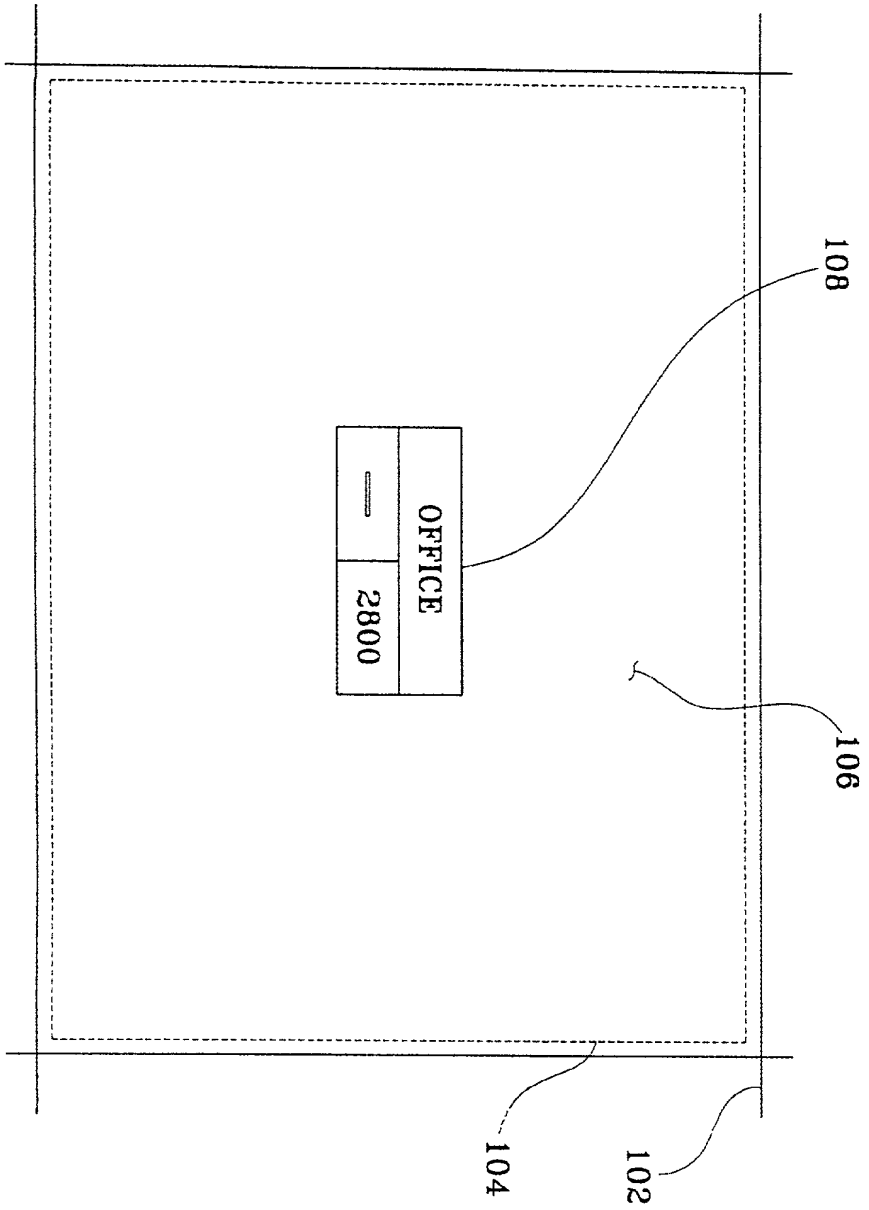


FIG.3a

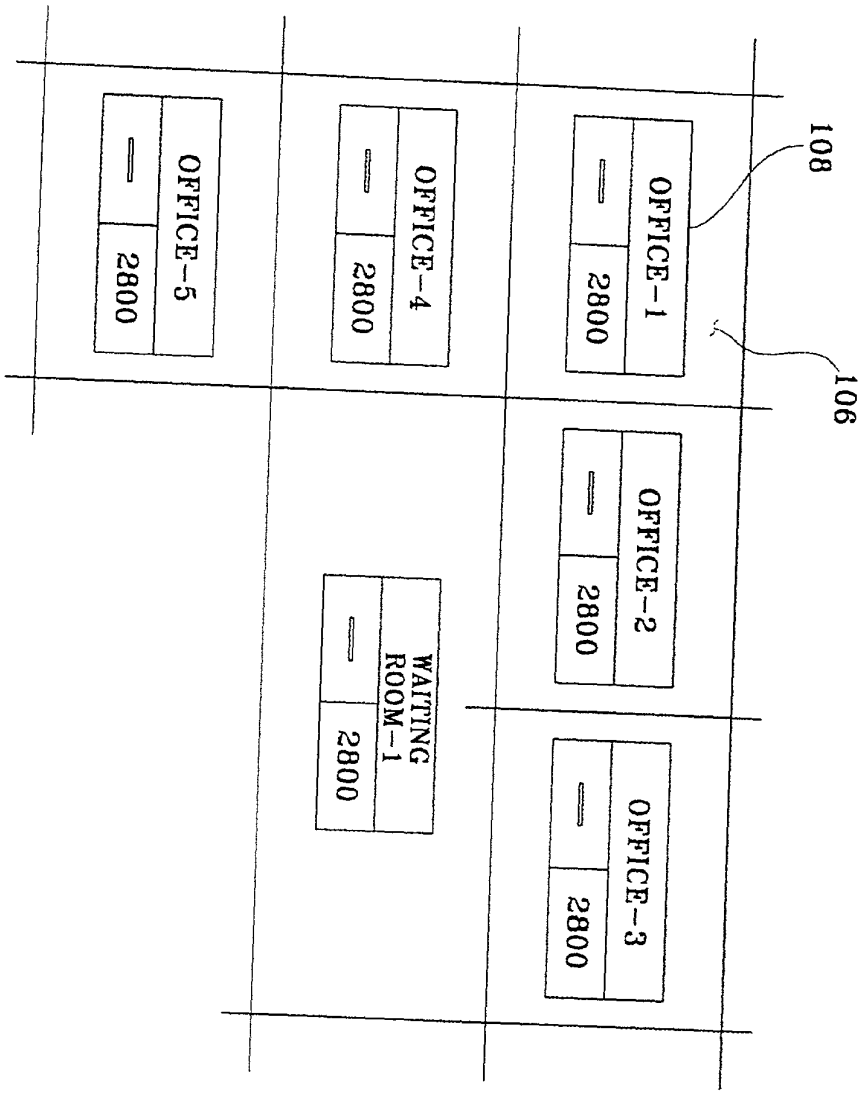


FIG.3b

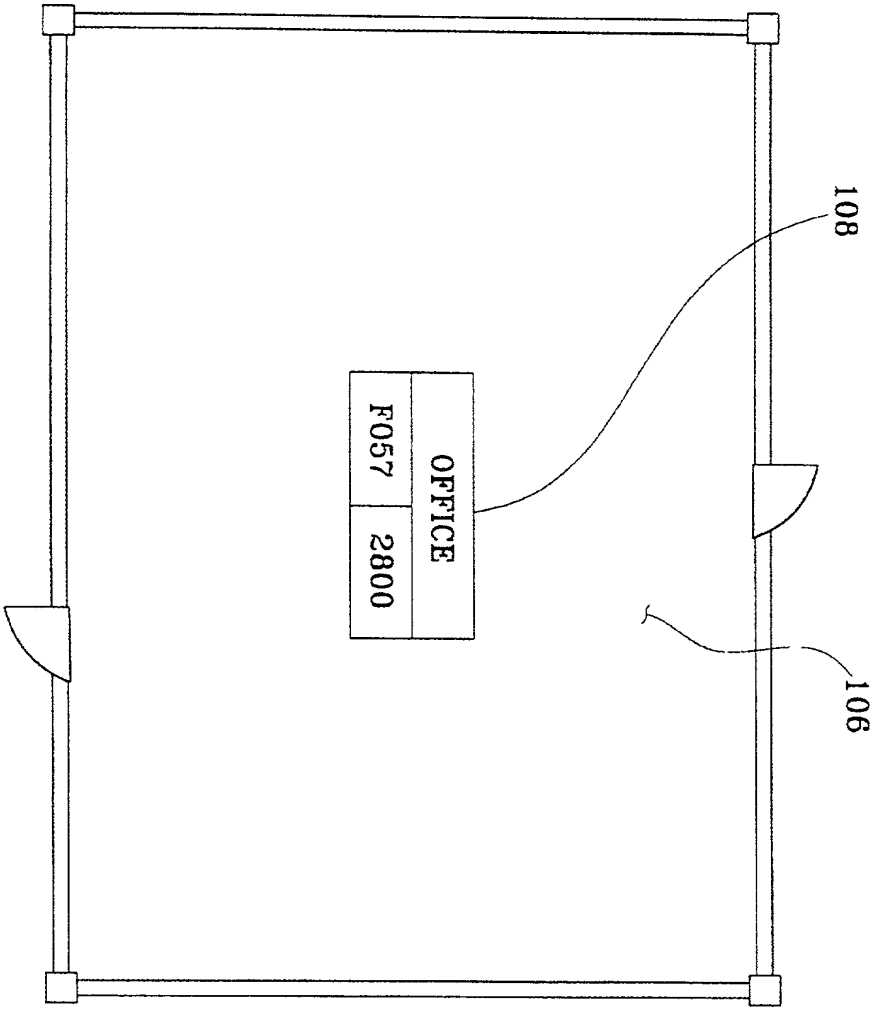


FIG.3c

FIG.4

```
(defun Room_xdata ( rm_list @bl @pto @han
                / ed xd rm_name_ rm_numb_ rm_finish_ rm_area_rm_cheig)
   ( regapp "POINTS" )
   ( setq rm_name_  (nth  0  rm list)          ;1. ROOM NAME
          rm_numb_       (nth  1  rm_list)    ;2. ROOM NUMBER
          rm_finish_     (nth  2  rm_list)    ;3. FINISH NUMBER
          rm_area_       (nth  3  rm_list)    ;4. AREA
          rm_cheig_      (nth  4  rm_list)    ;5. CEILING HEIGHT
    )
   ( if (= rm_finish_ "-") (setq rm_finish_""))
   (setq xd (list-3 (list "POINTS"
                (cons 1000 rm_name_)          ;1. ROOM NAME
                (cons 1000 rm_numb_)          ;2. ROOM NUMBER
                (cons 1000 "")                  ;3. FLOOR INTERSECTION
                (cons 1000 rm_finish_)        ;4. FINISH NUMBER
                (cons 1000 rm_area_)          ;5. FLOOR AREA
                (cons 1000 "")                  ;6. HEIGHT OF SKIRTING BOARD
                (cons 1000 rm_cheig_)         ;7. CEILING HEIGHT
                (cons 1013 @pt0)                ;8. ROOM CODE xy COORDINATE(original point)
                (cons 1011 @pt0)                ;9. ROOM CODE xy COORDINATE
                (cons 1000 @han)               ;10. HANDLE
                (cons 1000 "")                  ;11. POSITION OF DRAWING
                (cons 1000 "")                  ;12. HANDLE VALUE OF ROOM-INTERSECTING POLYLINE
        ) ) )
   (setq ed (entget @bl))              ;Entity list of block
   (setq ed (append ed (list xd)) )    ;Update Entity list of block
   (entmod ed)                ;Combine xdata POINT with entity list of block
) : DEFUN
```

FIG.5

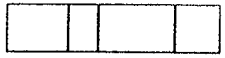
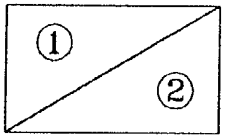
ROOM NUMBER : F1 0004 ROOM NAME : OFFICE-4							
ROOM SHAPE AND PLANIMETER	BUILDING ELEMENT	ITEM NAME	SPECIFICATION	UNIT	QUANTITY	TAKE-OFF FORMULA	UNIT COST
 1/500	WALL	[sw-1]3.60=1.80x2.00 [ssw-1]1.98=1.80x1.10					
	WATER-BASED PAINT	INNER WALL THREE TIMES		M2	37.55	19.57x2.70-(sw-1)	
	CONCRETE SURFACE TREATING	INNER WALL		M2	37.55	19.57x2.70-(sw-1)	
 1/200	FLOOR CEMENT MORTAR	FLOOR 24MM		M2	22.42	TA	
	DELUXE TILE		2.5x300x300	M2	22.42	TA	
	CEILING AL MOLDING			M	19.57	TL	
	LIGHT-WEIGHT STEEL FRAME	M-BAR		M2	22.42	TA	

FIG.6a

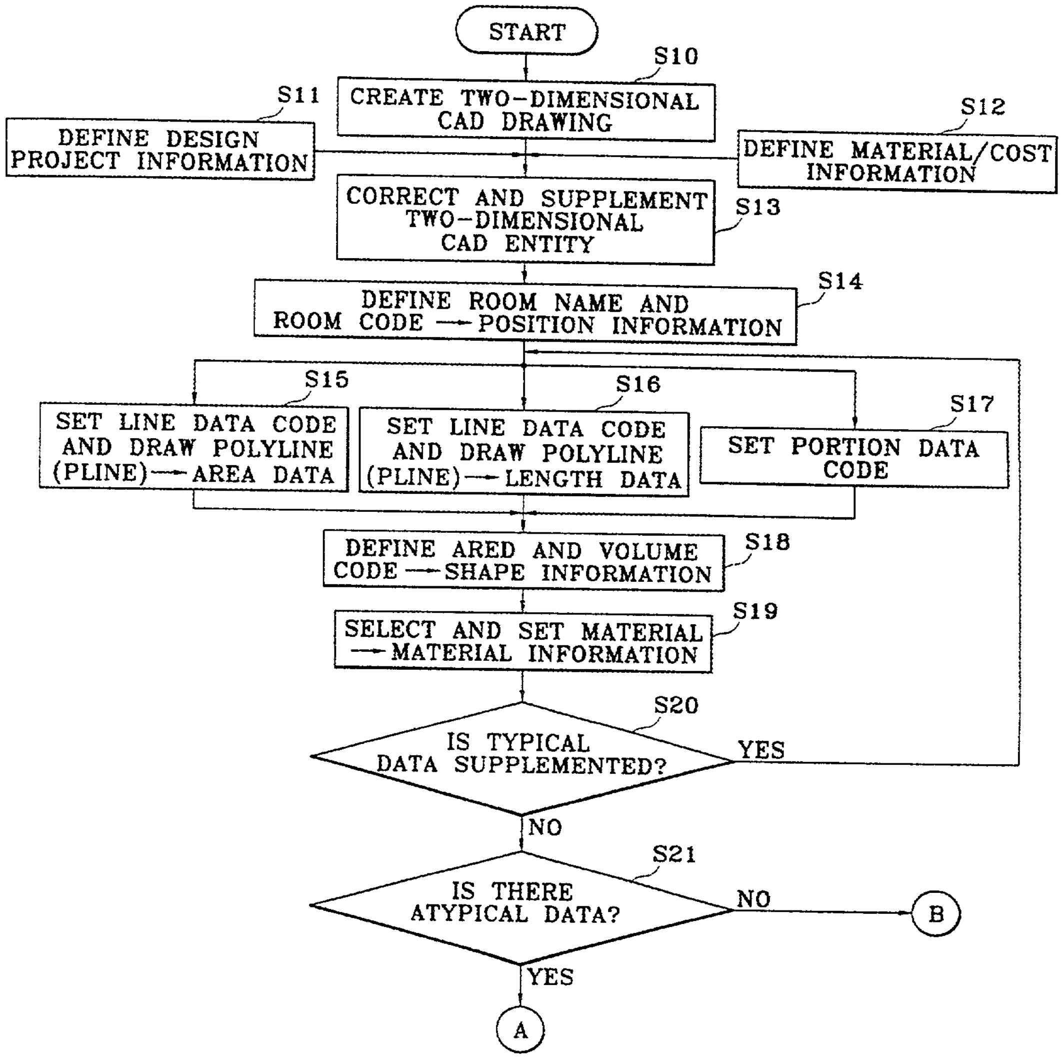

START
S10
CREATE TWO-DIMENSIONAL CAD DRAWING
S11
DEFINE DESIGN PROJECT INFORMATION
S12
DEFINE MATERIAL/COST INFORMATION
CORRECT AND SUPPLEMENT TWO-DIMENSIONAL CAD ENTITY
S13
S14
DEFINE ROOM NAME AND ROOM CODE → POSITION INFORMATION
S15
SET LINE DATA CODE AND DRAW POLYLINE (PLINE)→AREA DATA
S16
SET LINE DATA CODE AND DRAW POLYLINE (PLINE)→LENGTH DATA
S17
SET PORTION DATA CODE
DEFINE ARED AND VOLUME CODE→SHAPE INFORMATION
S18
SELECT AND SET MATERIAL →MATERIAL INFORMATION
S19
S20
IS TYPICAL DATA SUPPLEMENTED?
YES
NO
S21
IS THERE ATYPICAL DATA?
NO
B
YES
A

FIG.6b

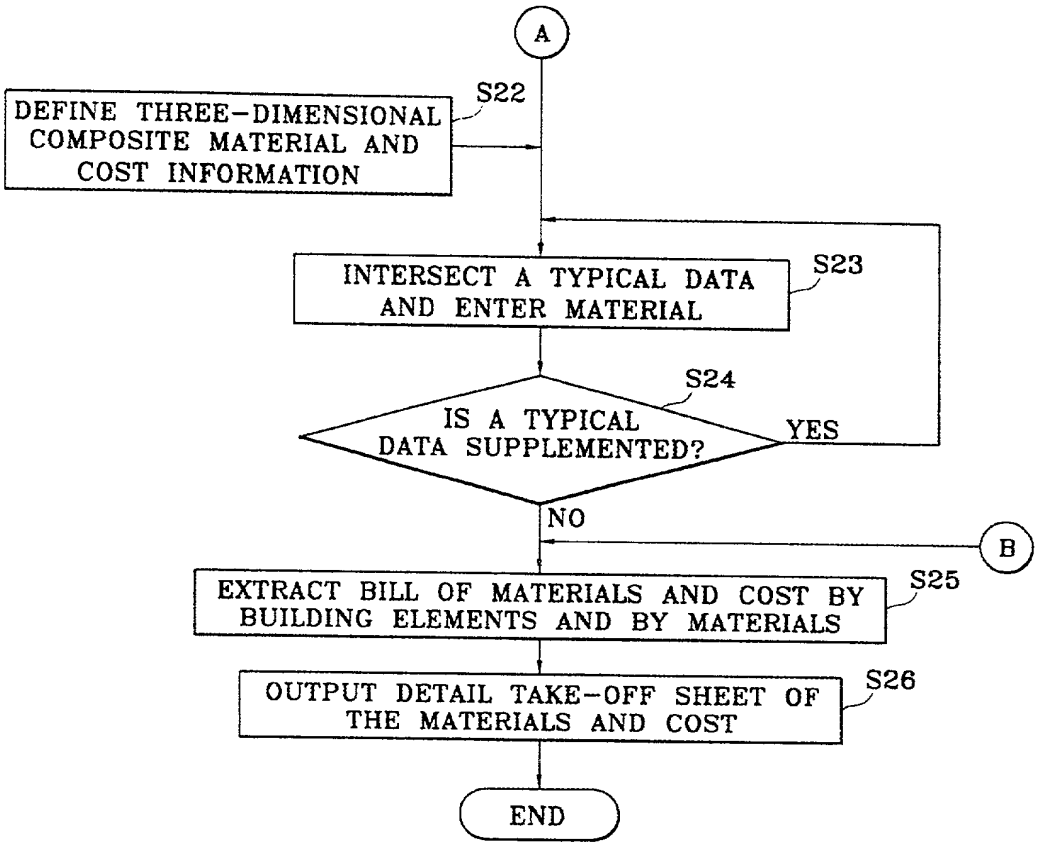


FIG.7

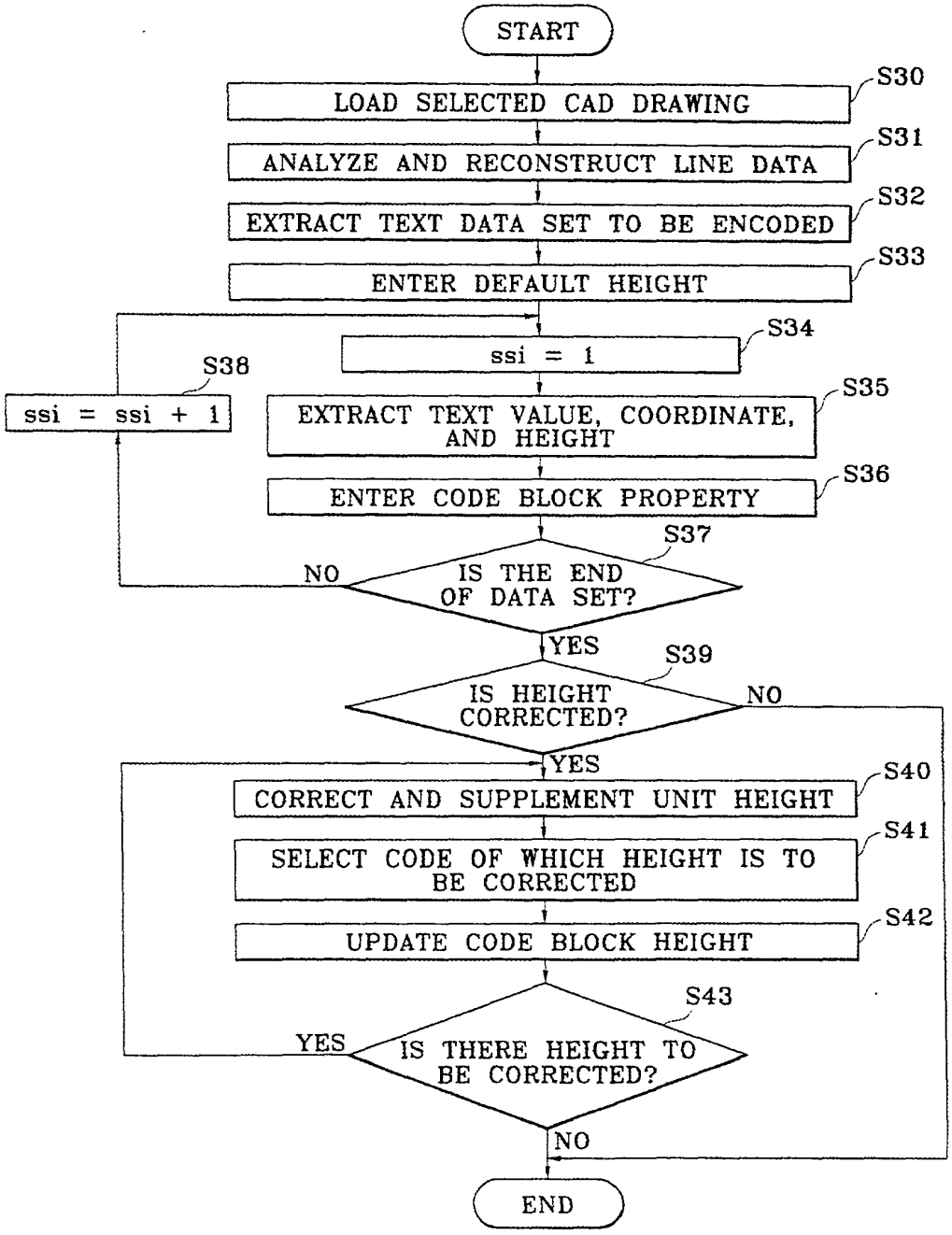


FIG.8a

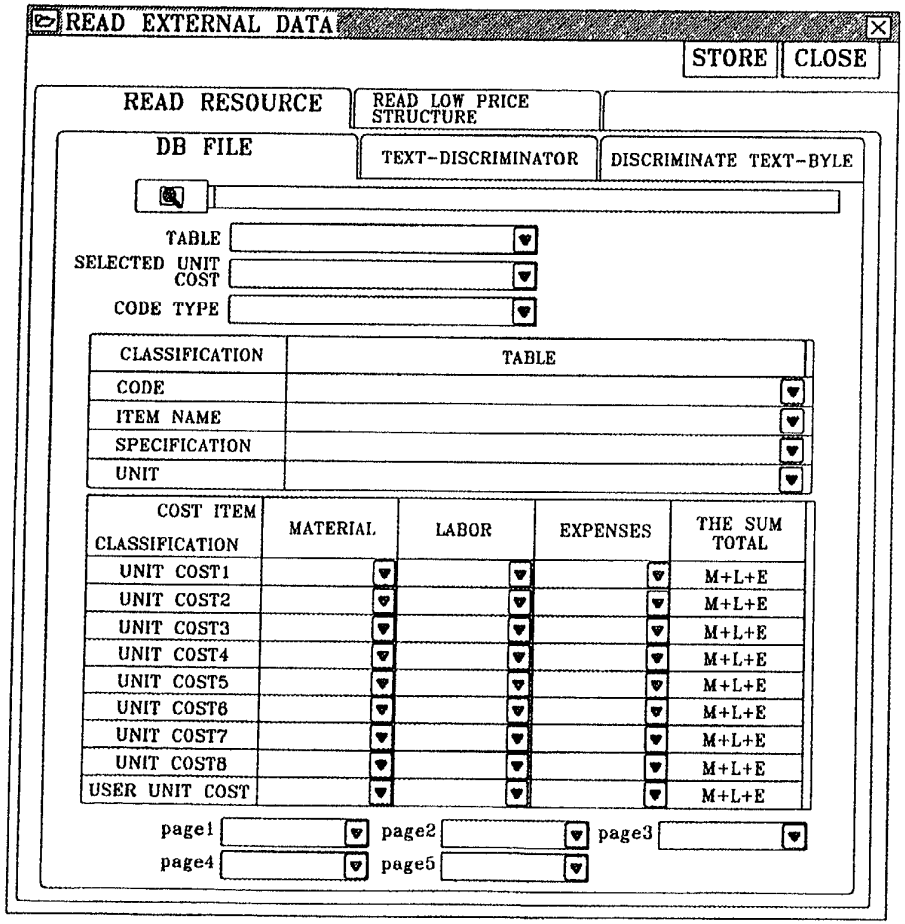


FIG.8b

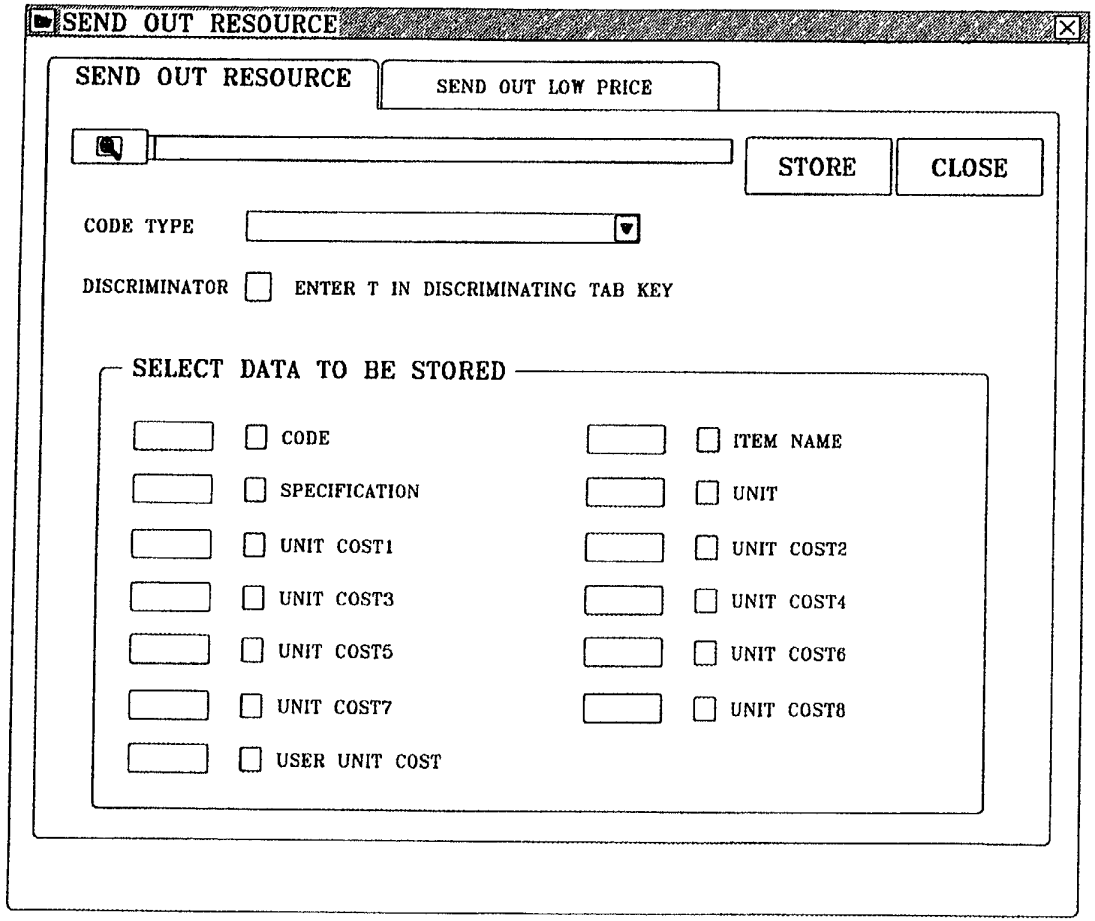


FIG.8c

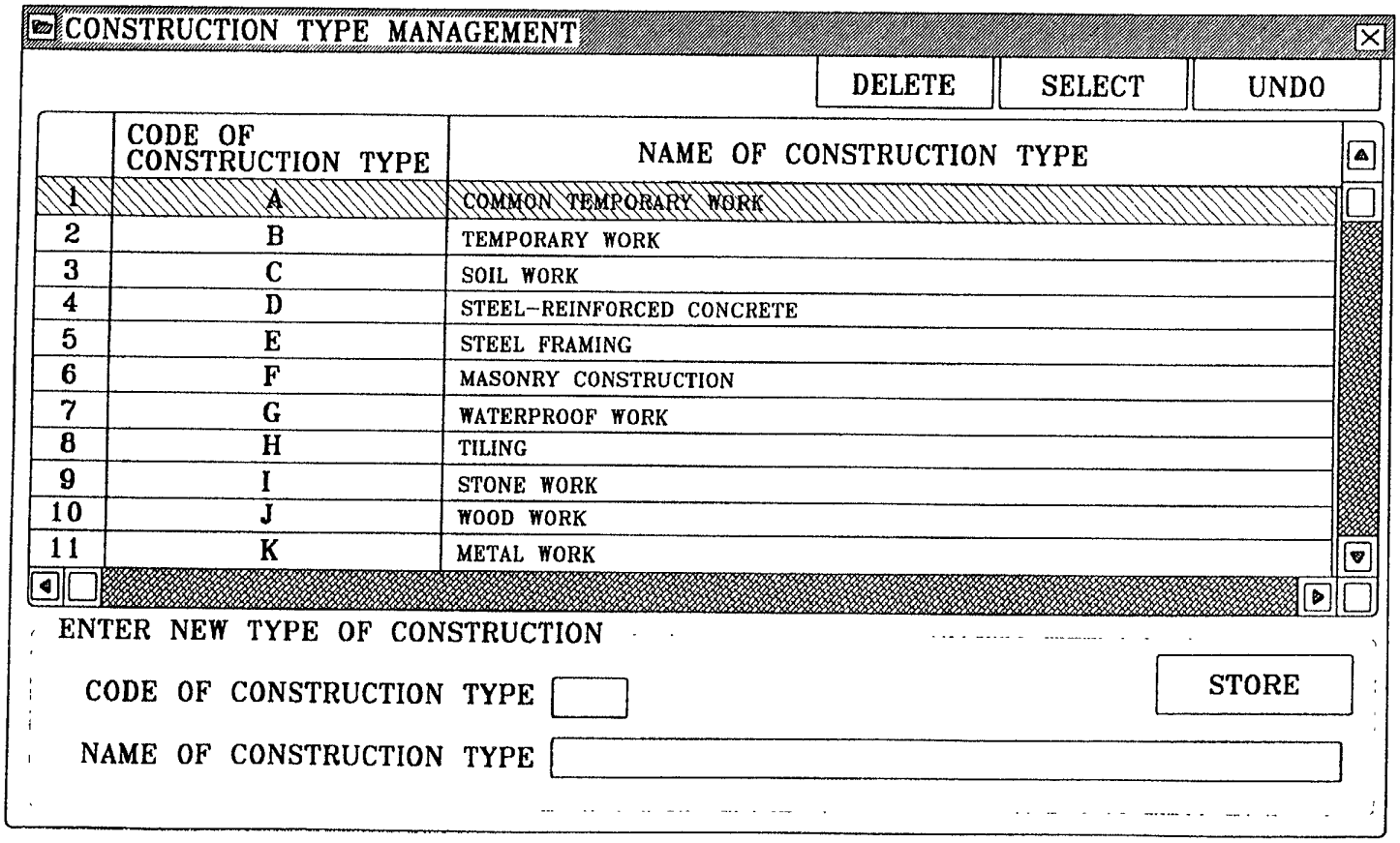
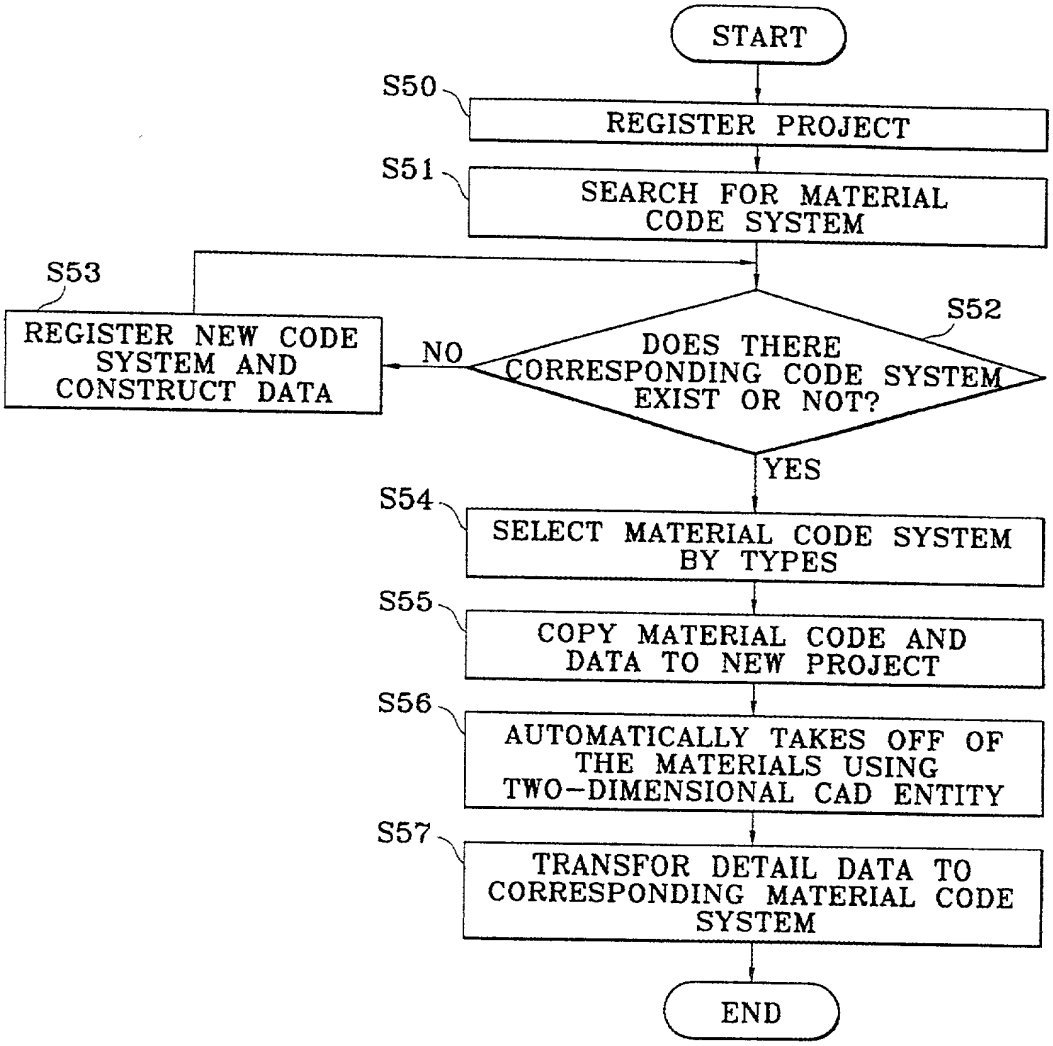


FIG.9


START
S50
REGISTER PROJECT
S51
SEARCH FOR MATERIAL CODE SYSTEM
S53
REGISTER NEW CODE SYSTEM AND CONSTRUCT DATA
NO
S52
DOES THERE CORRESPONDING CODE SYSTEM EXIST OR NOT?
YES
S54
SELECT MATERIAL CODE SYSTEM BY TYPES
S55
COPY MATERIAL CODE AND DATA TO NEW PROJECT
S56
AUTOMATICALLY TAKES OFF OF THE MATERIALS USING TWO-DIMENSIONAL CAD ENTITY
S57
TRANSFOR DETAIL DATA TO CORRESPONDING MATERIAL CODE SYSTEM
END

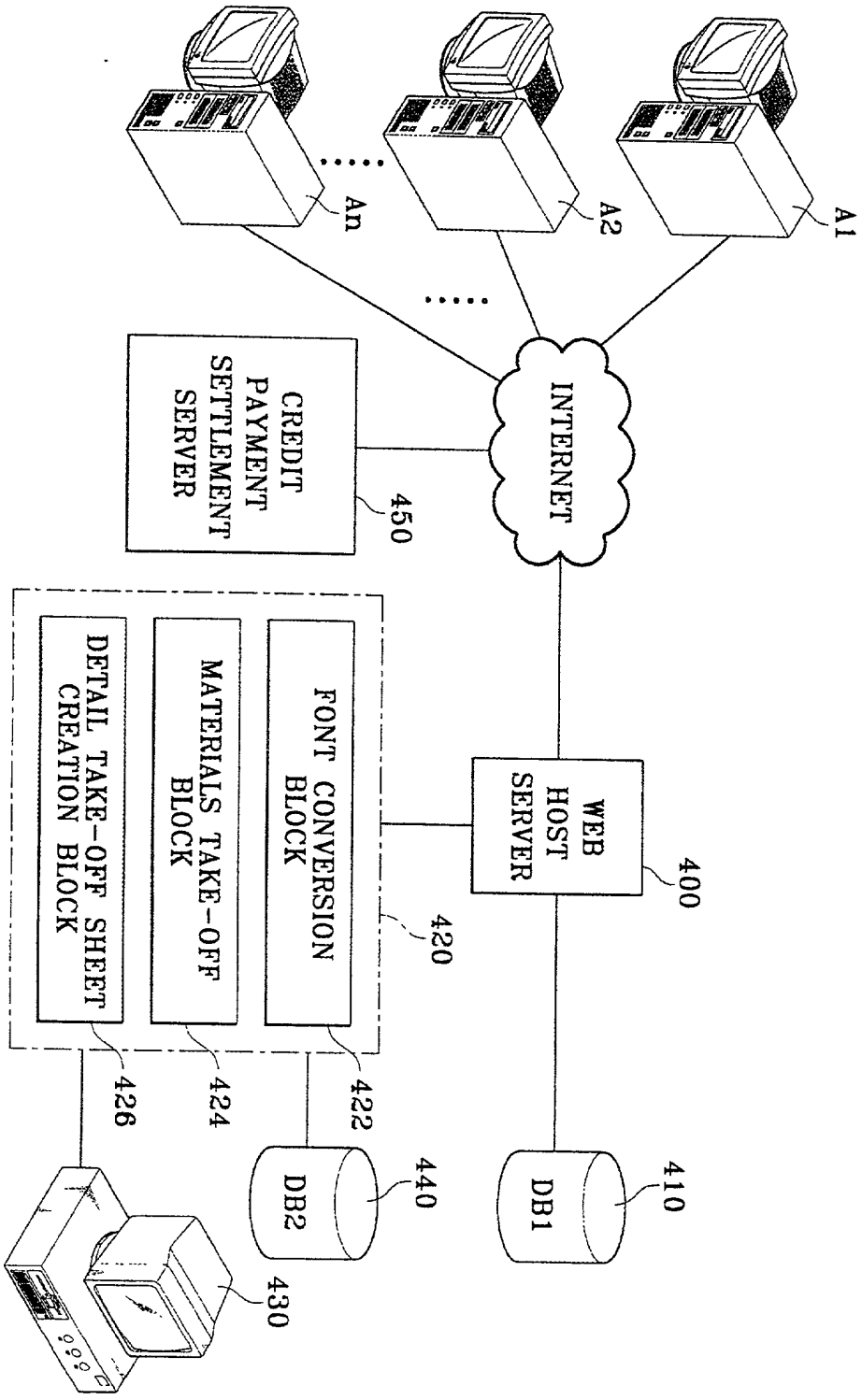

A1
A2
An
INTERNET
CREDIT PAYMENT SETTLEMENT SERVER
450
WEB HOST SERVER
400
FONT CONVERSION BLOCK
MATERIALS TAKE-OFF BLOCK
DETAIL TAKE-OFF SHEET CREATION BLOCK
420
422
424
426
DB1
410
DB2
440
430

FIG.10

FIG.11

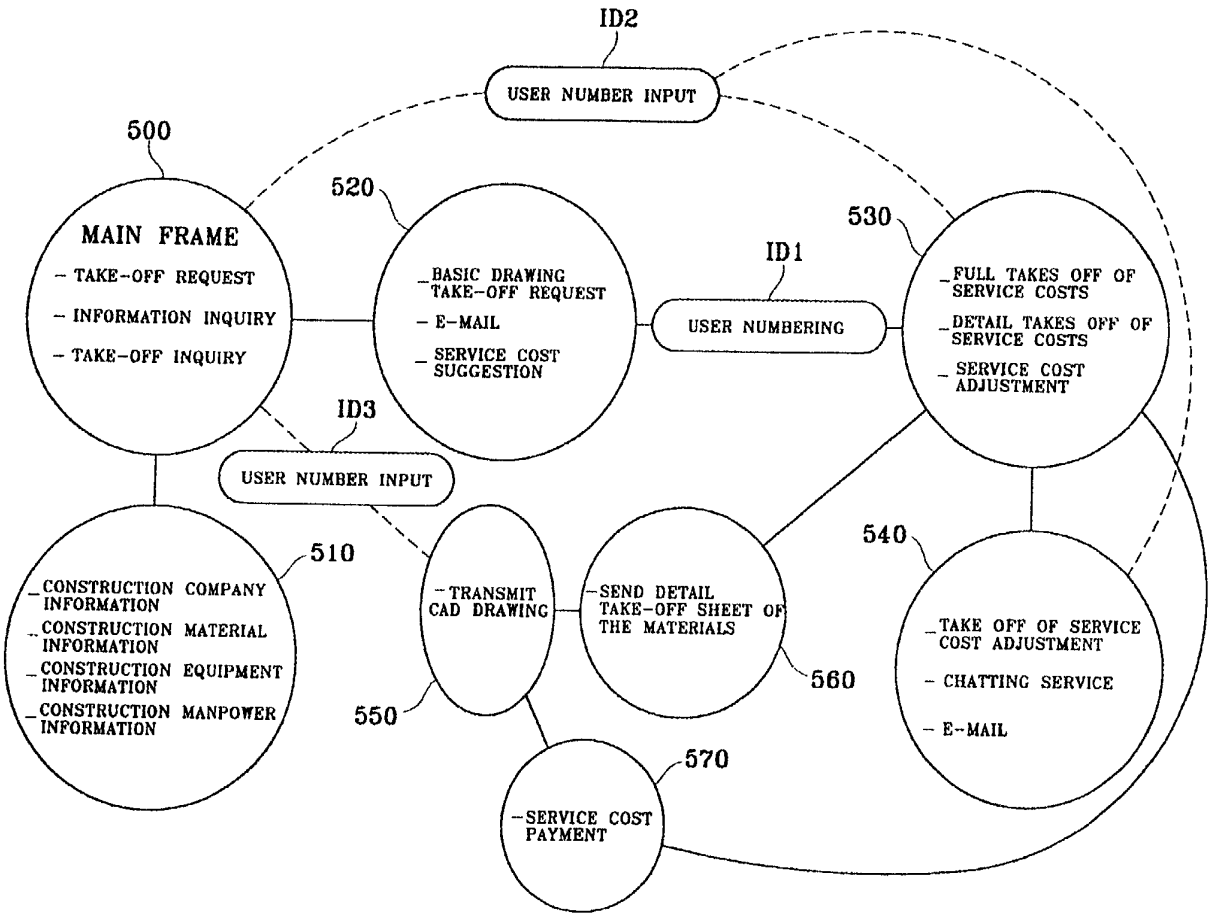


FIG.12